



RECEIVED

JUN 8 2004

TECH CENTER 2800

METHOD AND CIRCUITS FOR CONTROLLING THE POWER OF
AN ELECTRONICALLY SWITCHED TWO-PHASE
RELUCTANCE MACHINE

BACKGROUND OF THE INVENTION

The invention relates to electronically switched, two-phase reluctance machines (motors or generators, also called SR machines - switched reluctance machines) which have a particular magnetic circuit as known, for example, from the international patent applications WO 96/09683 and WO 98/23024.

Because of the magnetic circuits known from the prior art which allow a very simple, highly efficient recovery of the demagnetization energy of a just switched-off phase, up to now the instantaneous supplying of the second motor phase with current had to take place at the moment of the switching-off of the first one.

In order to achieve a power control, it has been proposed to interrupt the main current before the end of the phase. The current flow in this phase to be switched-off should be maintained up to the end of the phase duration due to the feedback of the self-induction voltage by means of two additional power transistors, such as that disclosed in WO 96/409683. These power transistors were also necessary in case of a regulation by the known pulse width modulation.

If the feedback of the self-induction voltage over the transistors would have been renounced to, this would have resulted in a waste further transmission of the by-pass current to the other phase of the wrong moment, with serious consequences for the efficiency. Up to now it was thus not possible, without additional expenditure of power electronics, to realize a power control based on the reduction of the duty cycle of the power switches.

Please enter the
Substitute Specification
R. 8/5/04